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Adopting Cross-Industry Best Practices for Measurable Results

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Increasingly, the healthcare field is being scrutinized much in the same way that stakeholders examine other industries. In 1997, the Nebraska Medical Center (NMC) was formed from the merger of Clarkson Hospital and the University of Nebraska Medical Center's University Hospital. The key to success is to stop thinking like a hospital and stop limiting their options only to "traditional" hospital-based solutions. For the past five years, many cross-industry best practices have been applied at the NMC. They started with enhancements to more traditional programs and have expanded into LEAN manufacturing and supply chain improvements. Here are the top six strategies employed at the NMC. 1. supply chain management, 2. six sigma, 3. LEAN manufacturing, 4. customer service, 5. crew resource management, and 6. balanced scorecard. The NMC applies the previously identified innovations in an integrated manner. The incorporation of these cross-industry best practices into the way they do business has served to improve the efficiency, effectiveness and outcomes of the organization in significant ways.

FULL TEXT:

Increasingly, the Healthcare field is being scrutinized much in the same way that stakeholders examine other industries. Outside entities including the business community, the bond market and even the government carefully examine our outcomes. The bottom line becomes an important measure of success.

Historically, healthcare organizations were held to a different definition of achievement. Because our mission was to save lives and heal the sick, we were subject to a unique set of expectations from the outside world. However, in recent years, this has changed. Several trends have altered the healthcare landscape, including increased expectations to improve quality of care and the need to control costs. This coupled with higher demands for service, increased competition, declining reimbursement, work force shortages, consumerism, costly technology improvements and physician reimbursements have created a new and challenging environment in recent years. The rest of the world now increasingly measures us much the same as they do any other industry and expects the same level of performance. At die Nebraska Medical Center (NMC), we have addressed these challenges by taking advantage of the lessons learned in other industries and have successfully adopted several of their best practices. The results have been gratifying.

What Other Industries Can Contribute to Healthcare

In 1997, the Nebraska Medical Center was formed from the merger of Clarkson Hospital and the University of Nebraska Medical Centers University Hospital. Currently a 690-bed, tertiary/quaternary academic medical center with a \$550 million annual budget and a national reputation in cancer care and transplantation, we have twice received the J.D, Power and Associates Distinguished Hospital for Service Excellence (2005 and 2006).

Our success did not happen by chance. We realized we could turn to many nonhealthcare related industries for strategies that would improve the way we do business. For example, the automobile and retail industries realized that the cost of inventory and maintaining a supply chain is an incredibly expensive commodity. Creative ways to save in this area and to maximize those savings were discovered. We also can leverage the knowledge of the hotel industry, as several similar services are offered.

The key to success is to stop thinking like a hospital and stop limiting our options only to "traditional" hospital-based solutions. For the past five years, many cross-industry best practices have been applied at the NMC. We started with enhancements to more traditional programs (such as quality improvement) and have expanded into LEAN manufacturing and supply chain improvements. Here are the top six strategies employed at the NMC.

Supply Chain Management

In hospitals today, supply costs are the second highest expense in an annual budget. Historically, this expenditure has been considered a necessary evil and has been ignored by senior management who defer control over these issues to the institution's Material Managers. At the NMC, we spend \$95 million a year on medical/surgical and pharmacy supplies-an amount we felt we could not "just accept." Looking to Wal-Mart as a business example, we developed a partnership with Cardinal Health to manage the cost and flow of the supply chain. At Wal-Mart, items for purchase are not owned by the company until they are taken to the cash register. For example, while a tube of toothpaste remains on the store shelf, it is owned by Procter & Gamble. The retail giant does not incur the cost of holding unsold merchandise.

We believed there was potential to employ this strategy in our organization. In 2003, we found a supplier that was willing to explore out-of-the-box options with us. It purchased our back supply of inventory for \$5 million and installed state-of-the-art technology to manage the storing and selling of supplies. We now have a "just-in-time" inventory system that allows for much better control over supplies while reducing costs. The system prevents supplies from being lost, stolen or stockpiled. In addition, we are able to immediately charge a patient for any ordered supply, allowing for more accurate billing.

Our supplier guaranteed \$5.2 million in savings during the first five years of activation. However, we felt this was not enough. A strong financial incentive was provided to do even more: the supplier retains 30 percent of any additional savings. As our partner, the supplier assigns its own employees to work full time in our facility. Because it benefits them financially, these professionals work hard to help us save money. The motivation to find the right inventory levels, along with other cost saving efforts, have thus far helped us achieve \$7 million in savings-after providing more than \$800,000 to our partner in incentives.

The NMC benefits, having eliminated our responsibility for logistics while improving our ability to obtain essential supplies. Consistent availability was something we could never ensure before we adopted this best practice. We currently maintain more than a 99 percent success rate in having needed supplies available when and where the end user needs them, and we have increased revenue capture by \$750,000 without having to lay off a single individual.

Six Sigma

Six Sigma has been used in the corporate world for a long time. While some question whether this management philosophy remains applicable in today's work environment, we have embraced this innovation and integrated it into every aspect of our system. It has become the "way we do business," and it has made a huge impact on the success of our organization.

Six Sigma provides a structured method of bringing teams together to address problems, identifies what the customer defines as being "critical to quality," aims to reduce process variability, eliminates defects and increases customer satisfaction through improved processes. This approach requires us to involve process experts—those at the front lines of operation who know the work best. Black and Green Belts facilitate problem solving through team building and the application of statistical and decision-making tools. Six Sigma sets the bar for improvement with a goal of 3.4 defects per million opportunities—near process perfection.

Our Six Sigma program has been in place for almost five years. Initial onsite training, lasting two years, was provided by Master Black Belts from GE Performance Solutions. Now, our program is self-sustaining with one manager, two full-time Master Black Belts, seven Black Belts and one Green Belt who lead projects and provide internal development. Since its implementation, a significant and positive change has occurred in the culture of our organization. Frontline staff and management utilize a common language regarding quality as a business strategy, accountability and data-driven decision making.

Change does not operate in a vacuum. Other innovations have been employed and partnered with Six Sigma measurements and principles. For example, employees of our supply chain partner served as team members for a Six Sigma project. Through the course of this project the team of both internal and external process experts worked together to strengthen the success of our supply chain management program. It should be noted that when all is said and done, a successful Six Sigma program must have the support and ongoing commitment of senior management.

LEAN Manufacturing

Hospitals are excellent candidates for the application of LEAN manufacturing techniques. Most hospital processes and care delivery sites were designed decades ago, and this often presents challenges when incorporating new programs or technologies. These things may be introduced in a hodgepodge manner, adding to the confusion and complexity of an already highly complex and confusing system. The result is oftentimes an inefficient and ineffective work environment that requires staff to work harder rather than smarter.

When we implemented LEAN manufacturing processes into a new sterile processing center for our operating room, architects, a Six Sigma Black Belt and sterile supply staff spent time together identifying necessary changes. In the end, they redesigned

the work area in a way that both eliminated a bottleneck (in the new design) and also "saved" an additional 167 miles of walking a year by staff. The staff buy-in achieved through their direct involvement is immeasurable.

Utilizing LEAN in our clinical laboratories also has been successful. In addition to reducing square feet (core lab space was reduced by 825 square feet), the redesign of workflow has reduced specimen processing turnaround time. For example, we have shaved more than 20 percent off the time it takes to obtain the results of a CBC. In addition, we reduced manpower requirements in one section alone by 11 FTEs. This reduction in FTEs has not resulted in layoffs; rather, it allows us to redirect the time and talents of these individuals toward other critical work. In the near future, we will be able to expand our ability to offer a wider variety of tests and services 24 hours a day, seven days a week.

Customer Service

Focusing on ways to enhance services for patients may seem counterintuitive to reducing costs, but it is in fact possible to improve customer service and satisfaction while eliminating waste. Our At Your Service program has completely changed the way we think about our patients and their families. The NMC regards patients as guests, providing them with services previously offered only in upscale hotels. This has served to increase our reputation in the community as a caring organization. One of these endeavors is a program that provides free valet parking to patients and their families. At first glance a luxury, this service also is a necessity for those transporting ill or frail individuals to the hospital for services.

Perhaps our most important and visible effort is the manner in which we changed meal services for patients. Most hospitals mass-produce three meals a day for hundreds of people. A great deal of effort is expended to keep food hot while trying to serve all patients simultaneously. So we asked ourselves, if hotels are able to feed guests individually on a 24-hour basis, why can't we? At the NMC, patients and their families are able to order what they want, when they want it, from a menu of 250 items. With an average meal delivery time of 23 minutes, this service is available 24 hours a day, seven days a week. We have received positive feedback on this new program; surveys have shown a significant increase in utilization and patient satisfaction levels. This food service is also available to staff between the hours of 10:00 p.m. and 4:00 a.m. This offering demonstrates our commitment to our staff by supporting them in their efforts to provide quality healthcare.

Crew Resource Management

In response to increased concerns of safety in the airline industry, a set of tools and techniques known as Crew Resource Management (CRM) was developed. After determining in the early 1980s that 70 percent to 80 percent of airline accidents occur as a result of poor communication and a lack of teamwork, the Federal Aviation Administration began to require that flight teams receive skills training in the following areas: teamwork and coordination, recognition of adverse events, communication within the team and decision making.

We feel that this training is applicable and easily adaptable to help ensure the safety of our patients. An early training partnership with CRM experts at **LifeWings** International evolved into our ability to be self sustaining. We now have two of our staff certified by **LifeWings** to provide in-house training at the NMC (the first non-aviators this company has trained). As a result of this, currently 1,045 clinical

professionals in Peri-Operative Services, the Emergency Department, the Cardiac Catheterization Lab, the Electrophysiology Lab and Labor and Delivery have received training. Our new goal is to "roll out" CRM training to all clinicians.

One of the key features of CRM is the "time-out briefing." Before the start of any procedure, all staff involved take time to discuss the upcoming event (i.e. surgical procedure, C-section or cardiac Catheterization) in a manner similar to a preflight briefing. Because both the planning for and the execution of such procedures is so complex, teamwork and communication must be at their best in order to catch and prevent errors. Use of this briefing and a host of other customized tools has already resulted in a number of what we call "good catches," including the identification of missing antibiotics, blood products or instruments prior to the start of a case; a mix-up of paperwork between two patients named Smith; and the identification of a wrong surgical site—all opportunities for error or delay that were averted through the application of this methodology. The training emphasizes the accountability of each member of the team regardless of his or her place in the traditional hierarchical order. A statement is read at the beginning of each procedure that all are expected to speak up if they see anything that is not in the best interest of the patient.

The debriefing process that occurs at the end of each case includes a simple documentation tool that logs potential or existing problems identified through the course of the procedure. Entered into a database, this information allows department leadership to identify issue trends that either lead to immediate resolution or may launch a LEAN event or a Six Sigma project. This documentation prevents problems from falling through the cracks.

Balanced Scorecard

The NMC developed five core principles, known as Priorities for Excellence, to act as guidelines for all organizational actions. Identifying that which is most important to our organization, these priorities inform the development of the strategic plan. Aligning the practice of all employees and physicians with these priorities will lead to overall organizational success because of the cause-and-effect relationships inherent within them. Measures of success are selected accordingly.

Lessons Learned

The NMC applies the previously identified innovations in an integrated manner. The incorporation of these cross-industry best practices into the way we do business has served to improve the efficiency, effectiveness and outcomes of the organization in significant ways. Most importantly, we have learned that there are better ways to deal with financial challenges than those traditionally employed in healthcare.

To improve the bottom line, it is important for leaders to ask themselves the following questions: Have you improved your product? Have you made outcomes better? Have you added services that are needed and beneficial? Have you made key stakeholders happy? If you are unable to answer in the affirmative, simply charging more for your services will not successfully resolve long-term financial performance.

These innovations not only inspire staff, but, more importantly, they involve them. Through the application of these initiatives, the knowledge, skills and creativity of front-line staff are channeled into making the NMC a better place to work, practice medicine and receive care. As people begin to "feel the difference" these innovations bring, departments are increasingly asking for help from Six Sigma for process

redesign and problem solving. There is a buzz around the medical center, and people are talking about the successes. At a recent regional nursing conference one of our staff nurses presented on the combined success of three different LEAN Six Sigma projects that had a profound effect on her work area. Six staff in various full-time positions are currently in Green Belt training and in the future will be able to apply the tools and techniques as they go about their day-to-day work.

Employee enthusiasm is incredibly important as the overall staffing picture on the horizon for healthcare is troublesome. It is anticipated that in the next five years, more individuals will retire than the "training pipeline" will be able to replace, and this calls upon us to deploy our human resources in smarter and more effective ways. We must also be conscious of the need to address the substantial loss of experience as our current work force begins to retire. As a major goal of these innovations is to "make work easier" for our employees, one measure of success is employee satisfaction. The turnover rate for all NMC employees is at or below the national benchmark. A staff opinion survey shows a continual increase in individuals stating that this is a good place to work and that they would proudly recommend us to friends and family for their healthcare services.

In addition, our financial metrics back up our success with these efforts. In terms of net income, we have seen a seven-fold increase since 2002. Our day's cash-on-hand has climbed from only 10 days in May of 2003 to more than 100 days in September of 2006. Our discharges reflect a significant increase in market share, and we have decreased the average length of stay per patient from 6.29 days to 5.72 days during a five-year period.

We have been able to accomplish these improvements through the implementation of cross-industry best practices along with critical success factors including: the commitment of the CEO, senior executives and board of directors; clear and consistent communication regarding goals; paying attention to the "people side" of change; celebration of successes; and integration of all initiatives at every step of the way.

Strategy: Priorities for Excellence

Most attractive environment to practice medicine

Most attractive employer

Highest quality of customer service and care

Enhanced clinical quality and patient safety

A culture of clinical, operational and financial accountability

The Nebraska Medical Center

Corporate Balanced Scorecard

Most attractive place to practice medicine

- Physician satisfaction

- Referring physician satisfaction

Most attractive employer

- Turnover rate (all)
- Turnover rate (RN)
- Staff satisfaction

Enhanced clinical quality & patient safety

- Core measure performance
- Nosocomial infection rate
- Harmful medical error rate
- Number of sentinel events

Highest quality customer service & care

- Length of stay
- Utilization
- Patient satisfaction

A culture of clinical, operational & financial accountability

- Labor efficiency
- Nonlabor efficiency
- Market share
- Contribution margin %
- Consumer share of mind
- Operating margin %
- Operational cash flow (EBITDA)
- Number of days cash-on-hand

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